

What is claimed is:

1. A motor comprising:

a motor main body, which includes a rotatable shaft and rotates the rotatable shaft;

a speed reducing unit, which is connected to the motor main body and includes a worm shaft, wherein the worm shaft is substantially coaxial with the rotatable shaft; and

a coupling means for coupling the rotatable shaft with the worm shaft, wherein the coupling means includes:

a driving-side rotator, which is connected with the rotatable shaft to rotate integrally with the rotatable shaft; and

a driven-side rotator, which is connected with the worm shaft to rotate integrally with the worm shaft and is engageable with the driving-side rotator in a rotational direction, wherein:

the rotatable shaft includes a connecting portion; and

the driving-side rotator includes a connecting portion, which is loosely fitted with the connecting portion of the rotatable shaft and is engageable with the connecting portion of the rotatable shaft in the rotational direction to rotate integrally with the connecting portion of the rotatable shaft.

2. A motor according to claim 1, wherein:

the driving-side rotator is made by resin molding; and

the driving-side rotator further includes a metal plate,

which is integrally formed with the connecting portion of the driving-side rotator and is directly engageable with the connecting portion of the rotatable shaft in the rotational direction to rotate integrally with the connecting portion of the rotatable shaft.

3. A motor according to claim 2, wherein the metal plate is insert molded in the driving-side rotator.

4. A motor according to claim 2, wherein:

the connecting portion of the driving-side rotator is a connecting hole, within which the connecting portion of the rotatable shaft is loosely fitted; and

the metal plate includes an engaging hole, which has a cross sectional shape substantially corresponding to that of the connecting hole of the driving-side rotator and is disposed in the connecting hole of the driving-side rotator to directly engage with the connecting portion of the rotatable shaft in the rotational direction to rotate integrally with the connecting portion of the rotatable shaft.

5. A motor according to claim 1, wherein the driving-side rotator further includes a resilient holding portion for resiliently holding the driving-side rotator around the rotatable shaft, so that the driving-side rotator is restrained from falling off the rotatable shaft during assembly of the motor.

6. A motor according to claim 5, wherein the resilient holding portion is integrally molded to the driving-side rotator.

7. A motor according to claim 1, wherein:

the coupling means is a clutch;

the clutch transmits rotational force of the rotatable shaft to the worm shaft through the driving-side rotator and the driven-side rotator; and

the clutch prevents transmission of rotational force of the worm shaft from the driven-side rotator to the driving-side rotator.

8. A motor according to claim 1, wherein:

the coupling means is a clutch;

the clutch transmits rotational force of the rotatable shaft to the worm shaft through the driving-side rotator and the driven-side rotator; and

the clutch transmits rotational force of the worm shaft from the driven-side rotator to the driving-side rotator while exerting a predetermined frictional force in the driven-side rotator.

9. A motor comprising:

a motor main body, which includes a yoke housing, wherein the yoke housing rotatably receives an armature, which includes a rotatable shaft and a commutator;

a brush holder, which is placed in an opening of the yoke housing, wherein the brush holder holds a plurality of brushes in sliding contact with the commutator and includes a bearing, which rotatably supports the rotatable shaft;

a speed reducing unit, which includes a gear housing connected to the yoke housing in such a manner that the brush holder is arranged between an opening of the gear housing and the opening of the yoke housing, wherein the gear housing rotatably receives a worm shaft, which is substantially coaxial with the rotatable shaft;

a coupling means for coupling the rotatable shaft with the worm shaft; and

a positioning means for positioning the brush holder and the gear housing relative to each other, wherein the positioning means is placed between the brush holder and the gear housing.

10. A motor according to claim 9, wherein:

the brush holder includes a clamp portion, which is clamped between the opening of the gear housing and the opening of the yoke housing along substantially an entire inner perimeter of the opening of the yoke housing; and

the positioning means is positioned radially inward of the clamp portion.

11. A motor according to claim 9, wherein the positioning means includes:

at least one positioning projection, which is provided in

one of the brush holder and the gear housing; and

at least one positioning hole, which is provided in the other of the brush holder and the gear housing and is engaged with the at least one positioning projection.

12. A motor according to claim 11, wherein:

the at least one positioning projection includes two or more positioning projections; and

the at least one positioning hole includes two or more positioning holes.

13. A motor according to claim 12, wherein:

at least two of the two or more positioning projections are substantially symmetrically arranged about the rotatable shaft; and

at least two of the two or more positioning holes are substantially symmetrically arranged about the rotatable shaft in opposed relationship to the at least two, respectively, of the two or more positioning projections.

14. A motor according to claim 9, wherein:

the coupling means is a clutch, which includes a driving-side rotator and a driven-side rotator, wherein the driving-side rotator is connected with the rotatable shaft to rotate integrally with the rotatable shaft, and the driven-side rotator is connected with the worm shaft to rotate integrally with the worm shaft and is engageable with the driving-side

rotator in a rotational direction;

the clutch transmits rotational force of the rotatable shaft to the worm shaft through the driving-side rotator and the driven-side rotator; and

the clutch prevents transmission of rotational force of the worm shaft from the driven-side rotator to the driving-side rotator.

15. A motor according to claim 9, wherein:

the coupling means is a clutch, which includes a driving-side rotator and a driven-side rotator, wherein the driving-side rotator is connected with the rotatable shaft to rotate integrally with the rotatable shaft, and the driven-side rotator is connected with the worm shaft to rotate integrally with the worm shaft and is engageable with the driving-side rotator in a rotational direction;

the clutch transmits rotational force of the rotatable shaft to the worm shaft through the driving-side rotator and the driven-side rotator; and

the clutch transmits rotational force of the worm shaft from the driven-side rotator to the driving-side rotator while exerting a predetermined frictional force in the driven-side rotator.